

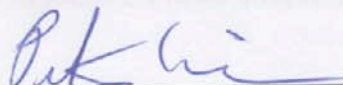
Operation of the Liquid Argon Materials Test Station ("Luke") and
microTPC ("Bo") at PAB

Operational Readiness Clearance

31 July 2008

REVIEWED AND APPROVED BY:

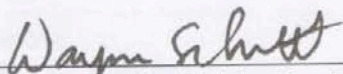
DATE



Particle Physics Division Head

8/1/08

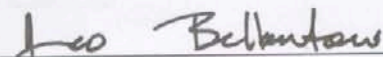
Comments/Exceptions:



Particle Physics Division Senior Safety Officer

8/1/08

Comments/Exceptions:

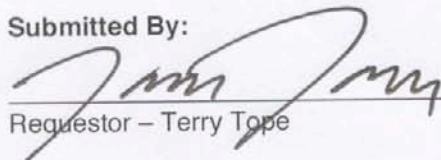


Committee Chair

1 August 2008

Comments/Exceptions:

Submitted By:



Requestor - Terry Tope

8.1.08

Electronic approvals for this form are acceptable. Please forward your responses to all recipients. A signed paper form (copy) of this document will exist in the Particle Physics Division Office. The original signed document will stay with the experiment requesting clearance.

From: Phil Pfund <pfund@fnal.gov>
Subject: **PAB FLARE Review Recommendation**
Date: July 31, 2008 3:37:58 PM CDT
To: Greg Bock <bock@fnal.gov>
Cc: Arkadiy Klebaner <klebaner@fnal.gov>, Brian Degraff <degraff@fnal.gov>, Dave Pushka <pushka@fnal.gov>, Terry Tope <tope@fnal.gov>, Tom Page <tpage@fnal.gov>, Wayne Schmitt <wschmitt@fnal.gov>
1 Attachment, 41.5 KB

Greg,

I have attached the PAB FLARE review recommendation from the Village Cryogenic Safety Panel.

Phil

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Philip A. Pfund Fermi National Accelerator Laboratory Direct: 630-840-4784 pfund@fnal.gov

Machine Shop, MS-332 40 Shabbona Fax: 630-840-8011
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Engineering, MS-316 Industrial Center Building, 3rd floor FAX: 630-840-4529



[PAB FLARE R...doc \(41.5 KB\)](#)

To: Greg Bock
Particle Physics Division

From: Phil Pfund
Chair, Village & Misc. Cryogenic Safety Review Panel

Subject: PAB FLARE Safety Review

Dear Greg,

The Village & Misc. Cryogenic Safety Review Panel has completed its review of the addition of a second cryostat, identified as “Bo”, to the FLARE liquid argon materials test station in the Proton Assembly Building (PAB).

Our review consisted of:

- Review of safety related documentation for the additional cryostat. All of the FLARE documentation and updates are maintained by Terry Tope at: <http://lartpc-docdb.fnal.gov:8080/cgi-bin/ShowDocument?docid=265> login: lartpc , password: argon! The documentation related to “Bo” is distributed by subject area throughout the document and consists of:
 - Vessel engineering note
 - Pressure test results
 - Updates to: system description (1.1), flow schematic (1.2), instrument and valve summary (1.3), system control loops, interlocks, and electrical schematics (1.4), procedure for filling “Bo” (2.1k), procedure for emptying “Bo” (2.1l), startup check list for “Bo” (2.2b), training list for operators (2.3), FMEA (3.1), “what-if” analysis (3.2), ODH analysis (3.5.a1), and relief valve sizing (4.1)
- Individual panel member e-mail exchanges with Terry Tope resulting in updates to the documentation listed above.
- 6/5/08 visit to PAB by panel members to view the installation underway and discuss the documentation in progress with Terry Tope. This primarily resulted in the elimination of some piping miter joints in favor of 90-degree pipe elbows.
- 7/17/08 visit to PAB by panel members to discuss comments resulting from panel member reviews of the new and revised documentation. This primarily resulted in a panel request for cutting and polishing of samples of the braze joint to be used in one section of the piping and further revisions to the documentation.
- 7/25/08 and 7/29/08 visits to PAB by panel members to view two variations of sectioned braze joints and the final “Bo” installation.

Based on the above listed review activities, we are satisfied that the test station as proposed with the second cryostat can be operated safely. We recommend that you authorize the operation.

Regards,

Phil Pfund

On behalf of the Village & Misc. Cryogenic Safety Review Panel

Copy: Wayne Schmitt
Terry Tope
Panel Members (Brian DeGraff, Tom Page, Dave Pushka)
Arkadiy Klebaner

From: Stephen Pordes <stephen@fnal.gov>
Subject: Fwd: Fw: electronics review info
Date: July 11, 2008 11:40:15 AM CDT
To: lar_at_fnal@fnal.gov, clk@fnal.gov, tope@fnal.gov, waltj@fnal.gov, bromberg@pa.msu.edu, edmunds@pa.msu.edu

fyi ..

Stephen

From: "Steven J. Chappa" <chappa@fnal.gov>
Date: July 11, 2008 11:37:40 AM CDT
To: schuh@fnal.gov
Cc: Stephen Pordes <stephen@fnal.gov>
Subject: Fw: electronics review info

Hi Keith,

I conducted the electrical safety review of the TPC "Bo" cryostat at PAB yesterday morning. Most of the concerns were addressed during the course of the review. The remaining corrective actions were completed as this confirmation email from Stephen indicates. Thus, I recommend that the "Bo" installation be issued the pORC as per their request.

Later,
Steve

----- Original Message -----
From: "Stephen Pordes" <stephen@fnal.gov>
To: "Steven J. Chappa" <chappa@fnal.gov>
Cc: <schuh@fnal.gov>; "Dan Edmunds" <edmunds@pa.msu.edu>
Sent: Friday, July 11, 2008 10:07 AM
Subject: Re: electronics review info

Hi Steve,

we have put the HV labels in the appropriate place and have put the pulser and the small power supply on a proper shelf. This covers the issues you raised.

many thanks

Stephen

----- Original Message -----
From: "Steven J. Chappa" <chappa@fnal.gov>
Date: Thursday, July 10, 2008 11:41 am
Subject: Re: electronics review info
To: Stephen Pordes <stephen@fnal.gov>
Cc: schuh@fnal.gov, Dan Edmunds <edmunds@pa.msu.edu>

Hi Stephen,

After my review, the only thing that needs to be done is application of the HV danger labels to both ends of the large HV coax cable and to the outside of the rack's rear door. I would also recommend that the door be secured with a lock for added protection but since the power supply is disabled when the cable is pulled, a lock to the rear door will not be required.

All of the other minor corrections we did while I was there, with the exception of installing the rack shelf for the function generator and

the
bench power supply. So, when the HV labels are installed, just send me
a
confirmation email and then I will submit my pORC recommendation to Keith.

Thanks to both you and Dan for your assistance and helpful information
while
I did my review.
Later,
Steve

----- Original Message ----- From: "Stephen Pordes" <stephen@fnal.gov>
To: <chappa@fnal.gov>
Sent: Wednesday, July 09, 2008 7:03 PM
Subject: electronics review info

> Hi Steve,
>
> I've put all Dan's documentation in :
> <http://lartpc-docdb.fnal.gov/cgi-bin/ShowDocument?docid=366>.
>
> There is a Nim Bin with commercial electronics also.
>
> Stephen
>